RCRA FACILITY ASSESSMENT
PHASE I
PRELIMINARY REVIEW

of the

CHEMCLENE CORPORATION
MALVERN, PENNSYLVANIA

EPA I.D. No. PAD 014353445

Submitted by:

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I. INTRODUCTION

The 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA) authorize EPA to require corrective action for releases of hazardous wastes and/or hazardous constituents from solid waste management units (SWMUs) and other areas of concern (AOCs) at all operating, closed, or closing RCRA facilities. The intent of this authority is to address previously unregulated releases to air, surface water, soil, and groundwater, and the generation of subsurface gas. The first phase of the corrective action program as established by EPA is performance of a RCRA Facility Assessment (RFA). The RFA includes a Preliminary Review (PR) of all available relevant documents, a Visual Site Inspection (VSI), and, if appropriate, a Sampling Visit (SV).

This report summarizes the results of the PR of the Chemclene Corporation facility in Malvern, Pennsylvania. The facility is a distributor of virgin chlorinated solvents and a reclaimer of waste chlorinated solvents through a distillation process. Sources of information utilized in the PR include files from EPA Region III and from the Pennsylvania Department of Environmental Resources (PADER) offices. No VSI was conducted as part of this review, and no conclusions have been made regarding the potential for releases from SWMUs and other areas of concern.

Chapter II discusses the environmental setting of the facility, including location and surrounding land use; climate and meteorology; topography, surface drainage, and soils; and geology and hydrogeology. Chapter III provides a facility description, including a general description; history of ownership and land use; regulatory history; operations and process description; wastes and waste management practices; and history of releases. Chapter IV provides a summary of the available information about each SWMU and identifies additional information needs. Chapter V lists the references used in preparing this review.

II. ENVIRONMENTAL SETTING

Location and Surrounding Land Use

The Chemclene Corporation (Chemclene) facility is located at 258 N. Phoenixville Pike in Chester County, at Malvern, Pennsylvania (Reference 64). Figure 1 shows a map of the area indicating the location and topography of the facility (Reference 191). The area surrounding the Chemclene facility has gradually changed over the past 30 years from open farmland and woods to one-acre, single-family residential developments and industrial parks. Homes south and west of the Chemclene facility were generally built between 1956 and 1959, with additional developments to the north and east of the facility being built during the 1970s (Reference 112).

The Chemclene facility occupies over 100 acres (Reference 112). The land immediately surrounding the facility is zoned residential. To the north and east of the facility, there are existing housing developments. There are single-family residences to the west and southwest, but these areas are mostly undeveloped (Reference 64). The Great Valley Senior High School and industrial parks are also located in the vicinity of the facility and may be affected by facility activities (Reference 191).

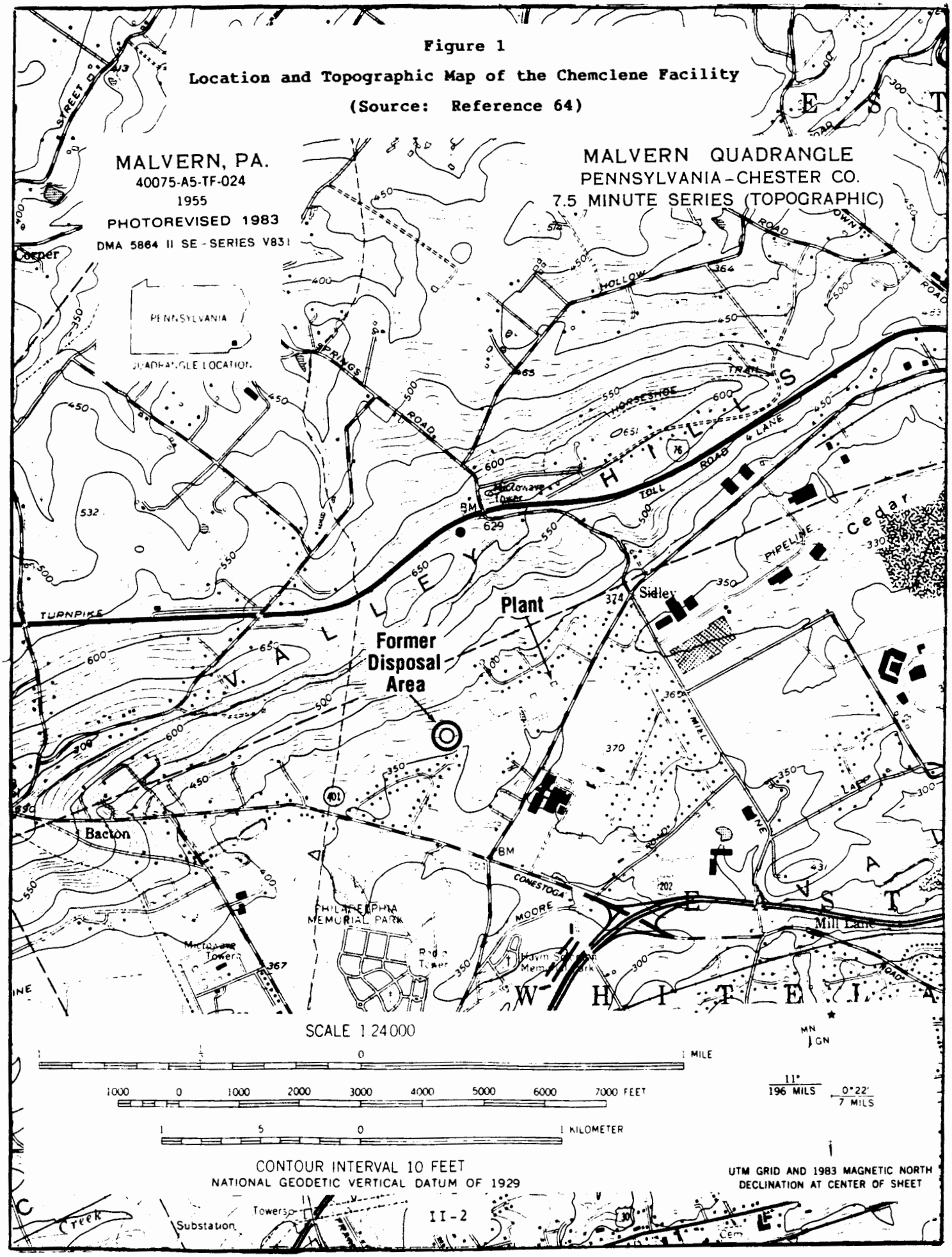
Climate and Meteorology

The climate in Chester County, Pennsylvania, is classified as humid temperate, but the temperature is moderated somewhat by the proximity of the Atlantic Ocean (Reference 198). The average annual temperature in the area is about 52°F, and the average annual precipitation is about 48 inches (Reference 198). The daily mean maximum and minimum temperatures for nearby West Chester, Pennsylvania, are 63.2° and 42.1°F, respectively (Reference 199). The prevailing winds are from the west (Reference 198). A wind rose for the Limerick Generating Station and Philadelphia is shown in Figure 2.

Figure 1

Location and Topographic Map of the Chemclene Facility

(Source: Reference 64)



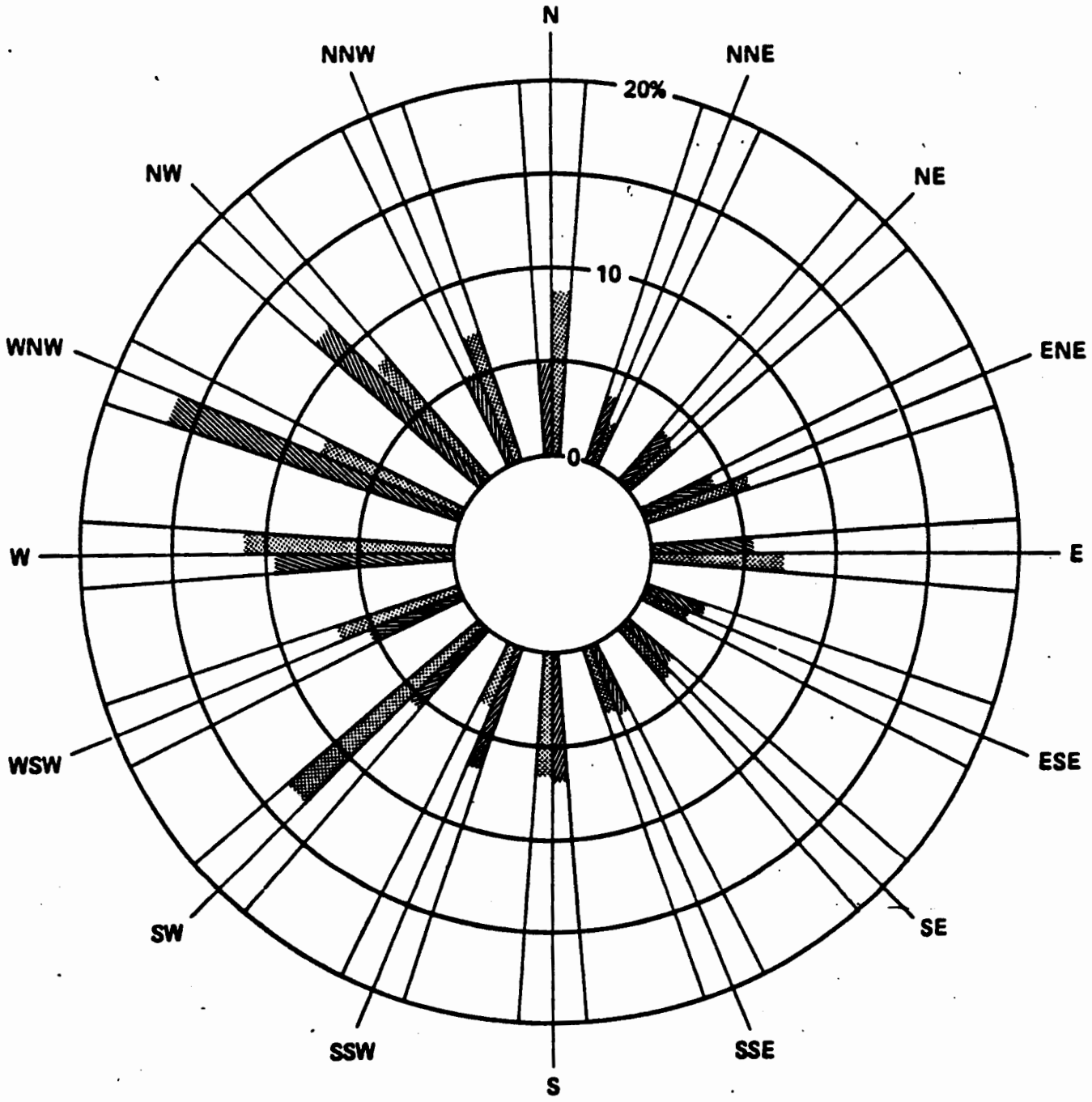
LIMERICK
1/72-12/76
HEIGHT 270 FT.

Figure 2

Wind Rose

(Source: Reference 64)

PHILADELPHIA
1/71-12/75
HEIGHT 20 FT.



PHILADELPHIA – 1.0% CALM

LIMERICK – 1.2% CALM

LIMERICK GENERATING STATION
UNITS 1 AND 2
ENVIRONMENTAL REPORT

LIMERICK VS. PHILADELPHIA
WIND DIRECTION PERCENTAGE

Topography, Surface Drainage, and Soils

The Chemclene facility comprises mostly wooded property situated along the base of the southeastern slope of Bacton Hill (Reference 112). Surface elevations in the vicinity of the facility range from 350 to 375 feet above mean sea level (MSL) (Reference 200).

Surface drainage in the facility area is toward the southwest. A surface water divide exists slightly to the northeast of the Chemclene facility, and surface drainage over the divide is down a streamless swale leading to the Devault and Cedar Hollow areas (Reference 112).

The only standing surface water is to the west of the facility and is a seasonal stream that flows from north to south. Surface water drainage from the facility does not drain into the seasonal stream (Reference 64).

According to the flood hazard boundary map (Community Panel No. 420279 0005 A), prepared by the Federal Emergency Management Agency for East Whiteland Township, the Chemclene facility is not within a 100-year flood plain (Reference 64).

The soil map unit identified at the Chemclene facility is CmB2 (Conestoga series). This soil series is depicted in Figure 3. The Conestoga series consist of deep, well drained soils on uplands, formed in residual material weathered from micaceous limestone and calcareous schist bedrock. Typically, these soils have a dark grayish brown silt loam surface layer 10 inches thick. The subsoil from 10 to 27 inches is a yellowish brown silt loam and from 27 to 38 inches it is a yellowish brown silty clay loam. Bedrock is found below a depth of 60 inches. Slopes range from 0 to 25 percent (Reference 198).

Figure 3

Soils Map

(Source: Reference 198)

Geology and Hydrogeology

The facility area is underlain by dolomites and limestones of the Elbrook, Ledger, Kinzers and Vintage formations and the schist and quartzite of the Harpers and Chickies formations. The western portion of the facility area is underlain by the Ledger formation, a light gray dolomite. The eastern portion is underlain by the Elbrook formation, a light gray to yellowish siliceous limestone containing interbedded dolomite. The hydrogeologic properties of both of these bedrock formations are very similar (Reference 112).

A zone of weathered overburden material overlies the solid bedrock. The thickness of this overburden in the vicinity of the facility varies from a few feet near bedrock exposures to probably depths of between 100 and 150 feet at the centers of incipient sinkholes (in the carbonate rocks). The overburden is composed primarily of clay and silt with some residual rock fragments and sand lenses (Reference 112).

There are two major faults trending in a southwest-northeast direction across the facility area. The northernmost of these two faults follows the break in slope at the base of Bacton Hill and serves as the boundary between the metamorphic phyllite and quartzites up slope and the carbonate rocks out in the valley. Major faulting and subsidiary fractures and joints have a significant impact on ground-water flow in the area (Reference 112).

Based on 40 CFR Part 264, Appendix VI, the Chemclene facility is not located in a political jurisdiction in which compliance with 40 CFR 264.18(a) (seismic considerations) must be demonstrated (Reference 201).

Ground-water movement in the area of the Chemclene facility appears to be complex and is affected by various factors, as summarized in Reference 112. In addition to faulting and ground-water pumping, it is probable that fracture zones and, to a lesser extent, bedding planes in

the bedrock influence ground-water flow. The water table in the vicinity of the facility may be either in the overburden or in the bedrock, depending on a variety of complex hydrogeological interrelationships and ground-water pumping. Depths to the water table vary between 0 feet at the surfaces of springs and some streams to more than 70 feet at other locations. Due to large human-induced withdrawals in the area (quarries in Devault and the Philadelphia Suburban Water Company's Great Valley Well) and recent recharge deficiencies, water level depths are much greater than normal. These declines in water level have caused some springs to dry up and some shallow wells to be adversely affected (Reference 112).

Topographic patterns in the area indicate that the natural subsurface flow should drain towards the southeast and Valley Creek. However, water level data from two investigations have indicated that increased pumping from a quarry in the Devault area may have altered flow direction to the northeast (Reference 112).

Ground-water movement in the bedrock under much of the Chemclene facility appears to be toward the northeast, parallel to major faults. Ground-water discharge points for this subsurface flow system are the deep quarries operated by two different companies in nearby Devault. Large quantities of ground water are pumped from these quarries for dewatering purposes, creating large cones of influence around them (Reference 112).

Additional information about the site-specific geology and ground-water flow conditions will be obtained during the RCRA Facility Investigation (RFI) to be conducted at the Chemclene facility (Reference 191).

According to Chester County authorities, most residential areas east and south of the Chemclene facility are provided public water supply by the Philadelphia Suburban Water Company (PSWC). However, residences immediately west and northwest of the facility on Phoenixville Pike and

Hillbrook Circle/Hillbrook Court appear to rely on individual wells. Also, PSWC has two wells within one mile of the Chemclene facility (Reference 53).

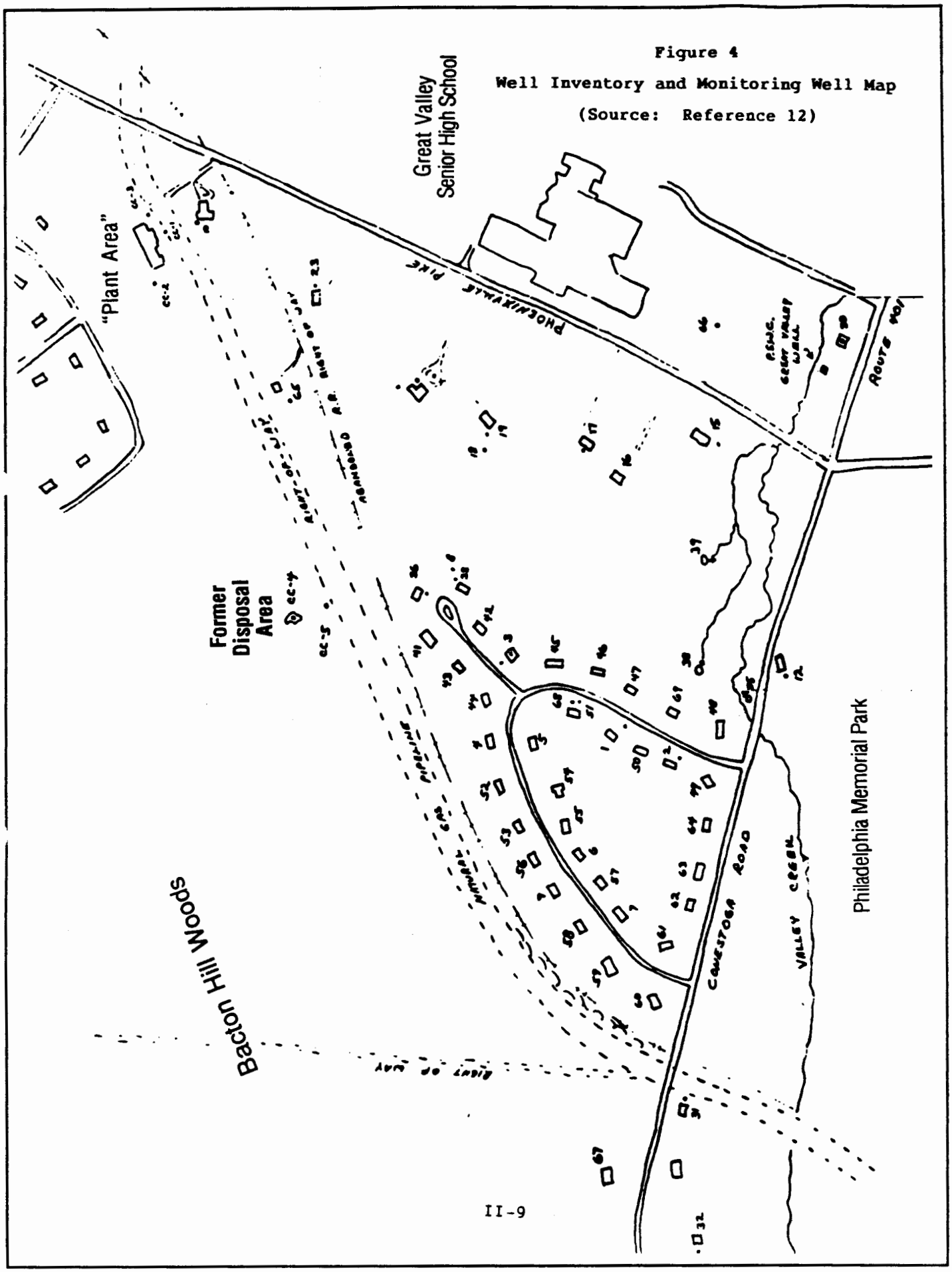
According to a November 1981 ground-water quality investigation report prepared by a consultant to Chemclene, most older homes in the immediate vicinity of the Chemclene property use domestic on-site wells for water supply purposes. Chemclene's consultant conducted an inventory of wells in the vicinity of the Chemclene property (Reference 12). The locations of these domestic wells are shown on Figure 4.

Chemclene's consultant also installed a ground-water monitoring system at the facility. The wells are located in the vicinity of the plant and at the former disposal area. Well locations were selected in downgradient directions of anticipated ground-water flow. Monitoring wells were designated as CC-1 through CC-5, and are shown in Figure 4 (Reference 12). Ground-water monitoring results are discussed under History of Releases.

Figure 4

Well Inventory and Monitoring Well Map

(Source: Reference 12)



III. FACILITY DESCRIPTION

General Facility Description

The Chemclene facility is located at 258 N. Phoenixville Pike in Chester County, at Malvern, Pennsylvania (Reference 64). The facility is situated on over 100 acres, and the land immediately surrounding the facility is zoned residential (References 64, 112).

Chemclene Corporation, founded in 1946, is a distributor of virgin and reclaimed chlorinated solvents as well as specialty blends of these chemicals. The virgin materials are purchased from the manufacturers and are brought to the Chemclene facility in bulk from the manufacturer's terminals. The reclaimed material is produced on site at the Chemclene facility and stored either in drums or bulk tanks. Chemclene is also a distributor for vapor degreasing equipment (Reference 64).

In order to produce the reclaimed solvents, Chemclene takes in waste chlorinated solvents. These solvents are stored prior to processing. The end products of processing waste solvents are the reclaimed solvents, and chlorinated still bottoms (EPA hazardous waste number F002). Chemclene currently ships these still bottoms off site for disposal at an approved facility (Reference 64).

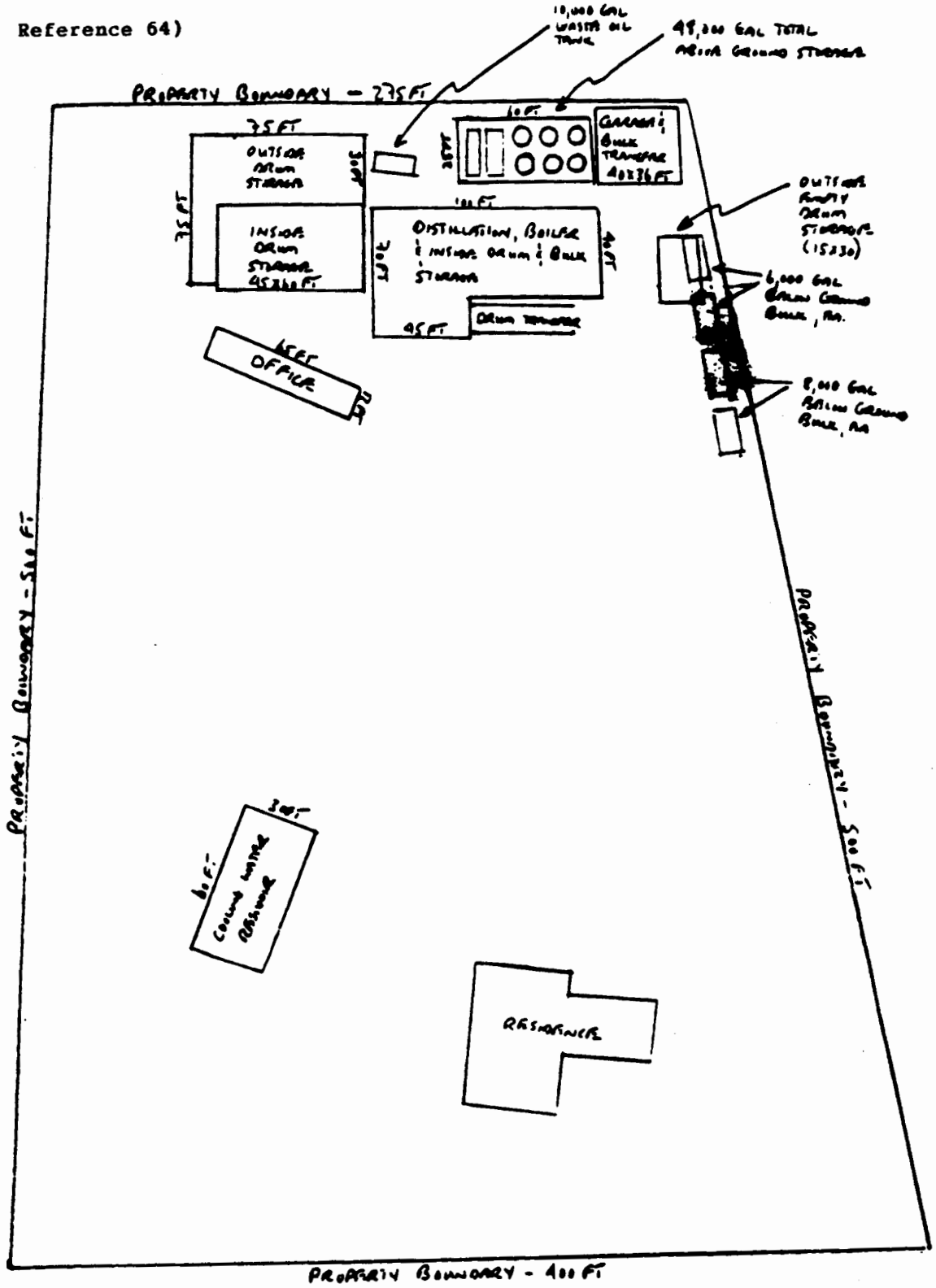
The Chemclene facility has been in its current location since 1952. The facility is comprised of two principal buildings and an office trailer. The facility layout is shown in Figure 5. The main building (plant) houses the process equipment, general storage, a boiler room and an office for plant administration. It also houses Waste Storage Tank A (SWMU 4) and associated containment which will be installed in the future. The second primary building, designated Storage Area 1 (SWMU 2), stores the majority of wastes (Reference 64).

Connecting the two principal buildings is a covered concrete pad which is used for the balance of the storage of wastes in containers.

Figure 5

Facility Layout

(Source: Reference 64)



It is designated as Storage Area 2 (SWMU 3), but it is also the receiving area and the temporary holding area. A Loading/Unloading Area (SWMU 1) is located adjacent to Storage Area 2 (Reference 64).

History of Ownership and Land Use

The Chemclene facility property is owned by the Balderston family (facility owner and operator). The facility has been in operation since 1952 (References 3, 64). Prior ownership and land use could not be determined from the reviewed file material. Additional information about land use and ownership will be requested in the VSI notification letter.

Regulatory History

The Chemclene facility has been subject to both CERCLA and RCRA authorities. The facility has been listed on the National Priorities List (NPL) due to the extent of the known contaminant releases to soils and ground water, which is used as drinking water. In addition, Chemclene has submitted RCRA Parts A and B permit applications for hazardous waste management activities associated with their solvent reclamation processes.

Chemclene has been identified as a hazardous waste treatment and storage facility, as well as a hazardous waste generator (Reference 191). Chemclene also transports spent solvents to their facility for reclamation. The hazardous waste residues from the reclamation process are stored on site prior to disposal at an approved off-site disposal facility (Reference 64).

On August 18, 1980, Chemclene submitted to EPA a Notification of Hazardous Waste Activity for its solvent distribution and recycling plant (Reference 191). On November 18, 1980, Chemclene submitted to EPA a Part A hazardous waste permit application for their facility. On May 3, 1983, Chemclene submitted to EPA a Modified Part A and Part B permit application (Reference 37).

Based on the file material reviewed, the Chemclene facility does not appear to have any National Pollutant Discharge Elimination System (NPDES) permitted discharges, does not discharge industrial or hazardous waste to a Publicly Owned Treatment Works (POTW), and does not have any air pollution control permits. However, an issue has been raised as to whether Chemclene's ground-water treatment system will adversely impact air quality (Reference 78). In addition, Chemclene has requested from PaDER the necessary permit to discharge treated ground water to a natural low area west of the facility (Reference 24). PaDER has denied Chemclene's request for a permit to discharge treated ground water (Reference 57).

The following is a chronology of regulatory actions, including notices of violation, pertaining to the Chemclene facility:

-- August 18, 1980 Chemclene submitted to EPA a Notification of Hazardous Waste Activity (Reference 4).

-- November 19, 1980 Chemclene submitted a Part A permit application to EPA (Reference 5).

-- August 27, 1981 PaDER cited Chemclene for violations, including lack of waste analysis on site; lack of 24 hour surveillance or barrier at active portion of site; absence of a written operating record containing location and quantity of each hazardous waste, results of waste analysis, or inspection results; leaking drums in an uncontained area; uncontained storage tanks; and uncontained inside and outside drum storage areas (Reference 10).

-- December 21, 1981 EPA provided Chemclene with Amended Conditions of Operation During Interim Status (Reference 13).

-- February 18, 1982 EPA provided Chemclene with Amended Conditions of Operating During Interim Status (Reference 14).

-- July 1, 1982 Chemclene requested from PaDER a permit to discharge treated ground water to a low area on site (Reference 24).

-- July 27, 1982 EPA contractor submitted to EPA a CERCLA Hazard Ranking Report for the Chemclene facility (Reference 28).

-- October 27, 1982 PaDER formally requested Chemclene to submit a Part B permit application (Reference 32).

-- December 1982 The Chemclene facility was listed on the NPL (Reference 106).

-- April 27, 1983 Chemclene submitted a Modified Part A and Part B permit application to PaDER (Reference 37).

-- May 3, 1983 Chemclene submitted a Modified Part A and Part B permit application to EPA (Reference 37).

-- October 21, 1983 EPA formally requested Chemclene to submit a Part B permit application (Reference 53).

-- October 25, 1983 PaDER cited Chemclene for violations pertaining to the uncontained rail car and inadequate aisle space between drums (Reference 54).

-- January 5, 1984 PaDER denied Chemclene's request for a permit to discharge treated ground water (Reference 57).

-- January 26, 1984 PaDER cited Chemclene of violation for continuing to store hazardous waste in an old rail car (Reference 58).

-- April 2, 1984 PaDER cited Chemclene for violations, including an uncontained outside hazardous waste tank, inadequate aisle space between drums, and for leaking drums of still bottoms (Reference 66).

-- April 30, 1984 Chemclene submitted a Modified Part A and Part B permit application to EPA (Reference 64).

-- June 28, 1984 EPA issued Notice of Deficiency and Notice of Violation to Chemclene for its incomplete Part B permit application (Reference 72).

-- July 16, 1984 EPA Hazardous Waste Enforcement Branch requested assistance from EPA Air Programs Branch on potential air impacts from Chemclene's ground-water treatment system (Reference 78).

-- July 20, 1984 PaDER provided deficiency comments to Chemclene on their April 27, 1984 Part B permit application (Reference 80).

-- April 17, 1985 PaDER cited Chemclene for violations, including an improperly labeled drum, a leaking drum, a fence in disrepair, an old rail tank car that was not contained, and for a small area of soil contaminated with an oil-like substance (Reference 96).

-- April 18, 1985 PaDER provided deficiency comments to Chemclene on their Modified Part A and Part B permit application, which was submitted in response to PaDER's review letter of July 20, 1984 (Reference 97).

-- October 8, 1985 PaDER notified Chemclene of CERCLA cleanup responsibilities of primary responsible party (PRP), including performing a Remedial Investigation/Feasibility Study (RI/FS) (Reference 102).

-- January 13, 1986 PaDER cited Chemclene for violations, including the fact that the old rail car was still not contained and because of a manifest violation (Reference 104).

-- May 29, 1986 EPA informed Chemclene that EPA has assumed the role of lead regulatory agency to oversee remedial actions at the Chemclene site. Also, EPA requested Chemclene to notify EPA whether Chemclene will perform the RI/FS, including submission of an RI/FS Work Plan (Reference 109).

-- July 1986 Chemclene's consultant developed an RI/FS Work Plan (Reference 112).

-- February 18, 1987 Chemclene facility was transferred from EPA CERCLA program to EPA RCRA enforcement program (Reference 135).

-- February 25, 1987 PaDER cited Chemclene for violation of bonding requirement (Reference 136).

-- May 22, 1987 PaDER cited Chemclene for violating the financial responsibility requirements (Reference 143).

-- August 5, 1987 The Part B permit application is under review and the facility is continuing its operation under interim status (Reference 145).

-- January 12, 1988 PaDER cited Chemclene for violations, including exceeding the maximum allowable one year storage limit for drums, inadequate aisle space between drums, and exceeding the maximum six-foot height requirement for stacking drums indoors (Reference 161).

-- March 21, 1988 PaDER notified Chemclene that their solvent reclamation process is neither covered by a Part B permit application nor approved as a legitimate Reuse, Recycle, Reclamation facility. PaDER also instructed Chemclene to resubmit the Notification of Hazardous Waste Activity form for their reclamation process (Reference 169).

-- May 23, 1988 PaDER cited Chemclene for violations, including accepting hazardous waste without obtaining a detailed chemical and physical analysis, exceeding drum stacking height requirements, and improper drum labeling (Reference 175).

-- June 14, 1988 PaDER cited Chemclene for a violation for accepting and transporting a hazardous waste shipment without being accompanied by a manifest (Reference 179).

-- September 13, 1988 PaDER cited Chemclene for violations, including lack of documentation of a weekly inspection of the storage area, exceeding drum stacking height requirements, inadequate aisle space, improperly labeled drums, and because soil sampled in the area near the garage where the gasoline tank was removed had significant levels of organic contaminants (Reference 185).

-- December 16, 1988 A RCRA Section 3008(h) Corrective Action Consent Order was executed between EPA and Chemclene (Reference 191).

Operations and Process Description

Chemclene employs a distillation process to remove impurities from waste solvents so that they can be sold to customers as reclaimed solvents. The distillation process equipment is housed in the main building (plant) (Reference 112). Additional process information will be requested from the facility in the Visual Site Inspection (VSI) notification letter.

Waste and Waste Management Practices

According to Chemclene's Part B permit application, the facility has applied for process design capacities of 64,240 gallons for container storage and 6,000 gallons for tank storage. At the time of the submission of the application, a 6,000-gallon hazardous waste storage tank had not yet been built (Reference 64).

The majority of wastes stored at the Chemclene facility are generated off-site by other companies. However, Chemclene does generate some waste on-site in the form of still bottoms from the recovery of halogenated solvents. Table 1 lists the EPA hazardous waste numbers and hazardous

Table 1

Hazardous Wastes Managed at the
Chemclene Facility
(Source: Reference 64)

EPA Hazardous Waste Number	Hazardous Waste
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

Table 1
(continued)

EPA Hazardous Waste Number	Hazardous Waste
U002	2 - Propanone
U031	1 - Butanol
U057	Cyclohexanone
U112	Ethyl acetate
U117	Ethyl ether
U239	Xylene
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
U140	Isobutyl alcohol
U154	Methanol
U159	Methyl ethyl ketone
U161	Methyl isobutyl ketone
U196	Pyridine
U220	Toluene
D001	Ignitable Wastes
U019	Benzene
D002	Corrosive wastes
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry

wastes contained in Chemclene's Part A permit application. According to Chemclene, the facility is not presently storing all of the wastes listed in its Part A permit application (Reference 64). Clarification of wastes managed (past and present) will be requested in the VSI notification letter.

Although the waste flow was not clearly described in the file material, it appears that containerized wastes from off-site are brought to the Loading/Unloading Area (SWMU 1) and then to the Receiving Area (SWMU 18). Wastes are then apparently segregated for storage, prior to processing, at either Storage Area 1 (SWMU 2) or Storage Area 2 (SWMU 3). It is not clear from the file material how the still bottoms from the solvent reclamation process are handled.

Additional information on the waste flow will be requested from the facility in the VSI notification letter.

Table 2 is a preliminary list of SWMUs identified during the PR. This list will be revised, as necessary, based on the findings of the VSI and on any additional information obtained concerning the Chemclene facility.

History of Releases

The Chemclene facility has an extensive history of contaminant releases to soils and ground water. This contamination has been attributed primarily to releases from the "former disposal area" (FDA) and the "plant area." The plant area is located in the northern portion of the facility property, and the FDA is located in a wooded area approximately one-quarter mile southwest of the plant. The FDA is comprised of two unlined earthen pits (SWMU 16), where drums of hazardous wastes (including various organic solvents) have been disposed for many years (possibly as early as 1950) (References 12, 191). This disposal practice reportedly ceased in 1976 (References 29, 30). Plant area contamination has been attributed to poor waste management practices by Chemclene.

Table 2

Preliminary List of Solid Waste Management Units at the Chemclene Facility

	Unit Name
1.	Loading/Unloading Area
2.	Storage Area 1
3.	Storage Area 2
4.	Waste Tank A
5.	Waste Tank B
6.	Solvent Reclamation Area
7.	Two Distillation Columns
8.	Old Spray Irrigation System
9.	New Spray Irrigation System
10.	Air Stripper
11.	Proposed Concrete Trench
12.	Outside Drum Storage Area
13.	Three Underground Storage Tanks
14.	Six Outside, Above-Ground Storage Tanks
15.	Old Rail Car
16.	Closed Disposal Pit, Open Disposal Pit
17.	Monitoring Well CC-3
18.	Covered Concrete Pad/Receiving Area
19.	Four Acre Spray Area
20.	Trough
21.	Chemical Waste Lagoon
22.	Abandoned Fuel Oil Truck
23.	Mixing Tank
24.	Portable Vacuum Tank
25.	Drums West of Open and Closed Disposal Pits

In 1980, Chemclene installed, on a voluntary basis, five ground-water monitoring wells. Three wells were installed at the plant area and two were installed at the FDA. On May 7, 1981, Chemclene collected samples from these monitoring wells, which revealed the presence of the hazardous wastes or hazardous constituents trichloroethylene (TCE), tetrachloroethylene (PCE), and 1,1,1-trichloroethane (TCA) in the ground water. Analytical results for these samples are contained in Table 3 (Reference 191).

Sampling of private domestic wells and on-site monitoring wells by PaDER and Chemclene in June 1980 and July 1981 revealed substantial contamination of the underlying shallow aquifer with chlorinated ethene and related compounds (up to 12,600 ug/l TCE and 1,170 ug/l PCE). Of 69 residences in the vicinity of the Chemclene facility, 44 were sampled and 20 of these showed detectable concentrations of TCE which ranged between trace (or <1 ug/l) to 1,330 ug/l. All contaminated wells were located within 200 yards to the south of the eastern disposal pits (References 29, 30).

On April 8, 1982, an EPA contractor performed soil sampling in the vicinity of the FDA. This sampling revealed substantial amounts of PCBs (up to 1,350,000 ug/kg of PCB-1254), chrysene (6,400 ug/l), flouranthene (3,500 ug/l) phenanthrene (26,000 ug/kg), and isophrone (109 ug/kg) (Reference 31).

After discussions with PaDER, Chemclene performed a voluntary cleanup of the FDA from 1981 to 1985. Chemclene removed materials from the FDA and contaminated soils to a depth of 15 feet. All of these materials were sent to a RCRA permitted disposal facility (Reference 191).

During the summer of 1984, Chemclene voluntarily installed a spray irrigation system to treat contaminated water from one of the plant area monitoring/corrective action wells. The operation of this system ceased in January of 1985 (Reference 191).

Chemclene is currently under a RCRA Section 3008(h) Corrective Action Consent Order to perform a RCRA Facility Investigation (RFI) to fully

Table 3

Ground-Water Monitoring Results
for On-Site Wells*

(Source: Reference 191)

Monitor Well	Elapsed Time in Minutes	TCA	TCE	PCE
CC-2	10	12.4	57.8	7.3
	20	13.3	62.2	7.0
	60	17.0	64.1	3.0
CC-3	30	2,080.	12,600.	1,120.
	40	2,230.	12,600.	1,170.
	60	1,690.	10,500.	885.
CC-5	5	586.	1,180.	861.
	20	627.	1,310.	904.
	30	572.	1,270.	743.

* Samples collected May 7, 1981. All results are given in micrograms per liter.

characterize the releases at the facility, and to perform a Corrective Measures Study (CMS) to determine appropriate cleanup remedies (Reference 191).

In addition to the previously described known releases to soils and ground water attributed to the FDA and the plant area, observations made during various inspections have revealed other releases or situations where the potential for releases exists. The following is a chronology of observations made during inspections conducted at the Chemclene facility:

-- August 5, 1981 — Leaking drums were observed in an area without containment. Waste storage tanks were not contained. Drums containing solvent still bottoms were not in good condition. An outside waste tank had a slight leak (Reference 8).

-- August 27, 1981 — Fifty to sixty leaking hazardous waste drums were found in an uncontained area. Storage tanks were not contained. Inside and outside drum storage areas were not contained (Reference 10).

-- October 17, 1983 — An old rail car containing hazardous waste was not contained (Reference - missing).

-- April 2, 1984 — The outside above-ground storage tank is not contained. The containment under and around a drum storage area is questionable. One leaking drum was noted (Reference 66).

-- April 17, 1985 — Oil-contaminated soil was observed around the concrete pad where hydraulic oil is stored. The sludge in the rail tank car was uncontained (Reference 96).

-- October 25, 1988 Soils near the garage were found to contain significant levels of organic contaminants (Reference 187).